

CLAIMS

What is claimed is:

1. A media exposure system, comprising:
 - a field-replaceable laser source subsystem that generates an exposure beam;
 - 5 a beam shaping subsystem that shapes the exposure beam; and
 - a scanning subsystem that scans the exposure beam over printing media.
2. A media exposure system as claimed in claim 1, wherein the field-replaceable laser source subsystem comprises a diode laser and a source lens.
3. A media exposure system as claimed in claim 2, wherein the source lens is aspheric.
- 10 4. A media exposure system as claimed in claim 1, wherein the field-replaceable laser source subsystem comprises a short wavelength diode laser.
5. A media exposure system as claimed in claim 4, wherein the short wavelength diode laser operates at less than about 500 nanometers.
6. A media exposure system as claimed in claim 1, wherein the beam shaping
15 subsystem comprises a singlet lens and a doublet lens to improve a collimation of the exposure beam.
7. A media exposure system as claimed in claim 6, wherein the beam shaping subsystem further comprises a singlet lens stage for adjusting a position of the singlet lens in a direction of an optical axis.
- 20 8. A media exposure system as claimed in claim 6, wherein the beam shaping subsystem further comprises a cylindrical lens for focusing the exposure beam along one axis.

9. A media exposure system as claimed in claim 8, wherein the beam shaping subsystem further includes a cylindrical lens stage for adjusting a position of the cylindrical lens in a direction of an optical axis.

10. A media exposure system as claimed in claim 9, wherein the beam shaping subsystem further includes a singlet lens stage for adjusting a position of the singlet lens in a direction of an optical axis.

11. A media exposure system as claimed in claim 1, wherein the beam shaping subsystem comprises a cylindrical lens for focusing the exposure beam along one axis.

12. A media exposure system as claimed in claim 1, wherein the beam shaping subsystem comprises at least one optical element stage for changing distances between optical elements in the beam shaping subsystem and/or relative to the field replaceable laser source to control the shaping of the exposure beam.

13. A media exposure system as claimed in claim 1; wherein the beam shaping subsystem comprises two optical element stages.

14. A media exposure system as claimed in claim 1, wherein the beam shaping subsystem comprises at least one optical element stage for changing distances between optical elements in the beam shaping subsystem and/or relative to the field replaceable laser source to control the shaping of the exposure beam to compensate for changes in a wavelength, shape and/or divergence angle of the exposure beam from the field-replaceable laser source.

15. A media exposure system as claimed in claim 1, wherein the scanning subsystem comprises a scanning device and post scanning optics for relaying the exposure beam from the scanning device to the printing media.

16. A media exposure system, comprising:

a laser source subsystem that generates an exposure beam;

a beam shaping subsystem that shapes the exposure beam and includes at least one optical element stage for changing distances between optical elements in the beam shaping subsystem and/or relative to the laser source subsystem to control the shaping of the exposure beam to compensate for changes in a wavelength, shape and/or divergence angle of the exposure beam from the laser source subsystem; and

a scanning subsystem that scans the exposure beam over printing media.

17. A media exposure system as claimed in claim 16, wherein the laser source subsystem comprises a diode laser and a source lens.

18. A media exposure system as claimed in claim 17, wherein the source lens is aspheric.

19. A media exposure system as claimed in claim 17, wherein the laser source subsystem comprises a short wavelength diode laser.

20. A media exposure system as claimed in claim 19, wherein the short wavelength diode laser operates at less than about 500 nanometers.

21. A media exposure system as claimed in claim 16, wherein the beam shaping subsystem comprises a singlet lens and a doublet lens to improve a collimation of the exposure beam.

22. A media exposure system as claimed in claim 21, wherein the beam shaping subsystem further includes a singlet lens stage for adjusting a position of the singlet lens in a direction of an optical axis.

23. A media exposure system as claimed in claim 22, wherein the beam shaping subsystem further comprises a cylindrical lens for focusing the exposure beam along one axis.

24. A media exposure system as claimed in claim 23, wherein the beam shaping subsystem further includes a cylindrical lens stage for adjusting a position of the cylindrical lens in a direction of an optical axis.

5 25. A media exposure system as claimed in claim 24, wherein the beam shaping subsystem further includes a singlet lens stage for adjusting a position of the singlet lens in a direction of an optical axis.

26. A media exposure system as claimed in claim 16, wherein the beam shaping subsystem comprises a cylindrical lens for focusing the exposure beam along one axis.

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